

sterile. In the remaining 51 cases streptococci were found in 29, only 7 of these showing pure cultures, however. Of the other organisms encountered, Welch bacilli were present in 21 cases, diphtheroid bacilli in 10, a few colonies of *Staphylococcus albus* in 9, gonococci in 2, colon bacilli in 3, and an aerobic streptothrix in 1. The tubes were cultured in 5 cases, and when positive showed organisms with cultural characteristics similar to those from the ovary. The staphylococci and diphtheroid bacilli are considered by the author as accidental or harmless invaders, whereas the significance of the Welch bacillus is doubtful. It probably, however, plays no determining role in the etiology of fibrocytic ovary. Intravenous injections into animals of 5 of the strains of streptococci showed them to be of a low grade of virulence, rabbits and dogs recovering promptly. Two of these strains appeared to show, however, an elective affinity for the ovary in these animals. The first of these was obtained from a girl, aged eighteen years, with an imperforate vagina, fibrous degeneration of the tubes with closure of the right, and fibrous and cystic degeneration of the ovaries. All cultures from the tube remained sterile, while those from the ovary showed streptococci. A subculture was injected into a female dog, which was chloroformed three weeks later; the ovary showed a number of encapsulated, yellowish nodular areas beneath the capsule, filled with chocolate colored fluid, rich in leukocytes, but sterile on culture. There were no other lesions. The second case was that of a woman, aged thirty years, who developed subsequent to an acute arthritis severe dysmenorrhea and menorrhagia, for which first the left and then the right ovary were removed. Cultures from both showed the *Streptococcus viridans*; subcultures were injected into 3 dogs and 4 rabbits and the animals killed on the second and third days. All showed severe lesions of one or both ovaries, such as hemorrhages and leukocytic infiltration. Cultures from the ovaries showed streptococci in about half the cases. Five of the animals showed in addition to the ovarian lesions distinct arthritis and other miscellaneous lesions. From these investigations, Rosenow considers the conclusion warranted that fibrocytic degeneration of the ovary, even in the absence of previous acute infection, may be due to a low grade hematogenous infection by streptococci having an elective affinity for these structures. If this be true, it seems possible that the timely eradication of primary foci of infection might in some cases prevent the premature sclerotic degeneration of the ovary.

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## OTOLOGY

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UNDER THE CHARGE OF

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Supramastoideal Pneumatocele in Chronic Mastoiditis.—O. MUCK  
*Ztschr. f. Ohrenheilk.*, January, 1916). A pneumatocele, in the region

entitled, implies a circumscribed space between the periosteum and bone, containing air and extending upward and backward as well as forward from the mastoid surface exteriorly; the result not of injury but of the passage of air from the pneumatic cells of the mastoid, through some defect in the cortical bone, beneath the periosteum elevating it from the bone to varying extent. The author finding no example in the literature of the subject of such a pneumatocele containing the gaseous products of decomposition, reports the following case: The patient, aged four years, had chronic suppurative otitis media of three years' standing; two days previous to examination he had severe pain in the ear, and within twenty-four hours the development of a marked fluctuating swelling behind the auricle extending from 3 to 4 cm. upward and backward. A crescentic incision at the base of the auricle, posteriorly, revealed a decided thickening of the soft tissues and extension of the incision through the periosteum liberated, not pus, but a foul-smelling gas; the scalp was found to be elevated upward and backward, and in the pocket thus formed there were small blood coagula evidently not of recent origin. The cortical surface of the mastoid was pale, without areas of congestion or spontaneous defects. The diploetic interior of the mastoid was, in places, of a light green color without grauulomata, the antrum was in place but the malleus wanting, and there was a large obstructive granulation polyp in the tympanum and a small quantity of greenish-yellow fetid pus in the mastoid cavity. The plastic dressing followed the operation in a fortnight, and the case was entirely healed in seven weeks. There being in this case no spontaneous defects in the mastoid cortex, there being no sutura mastoidea squamosa and no fistulous leakage of pus through the cortex, the only conclusion possible was that the gases engendered in the diploetic spaces of the mastoid had made their way along the normal vascular bone openings outward to the cortical surface and denuded it of its periosteal covering. The preoperative palpation of the postaural swelling, which was apparently provocative of considerable pain, gave the impression of a fluid content.

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Otological Report of One Year of Military Service.—OSCAR MAUTHNER (*Monatschr. f. Ohrenheilk.*, December, 1915). The number of cases treated in the ear, nose, and throat department of the Garrison Hospital, No. 6, in Olmutz, in charge of the author, as regimental surgeon, in the first year of the war was 5097, a number equaling that of many polyclinics in time of peace; but the character of the service rendered was essentially different in two respects, and divisible naturally, in two directions, that of estimation of condition and of possible results, as bearing upon capacity for future service, on the one hand, and treatment, on the other, the patients being further divisible into those who came into the hospital because of injuries inflicted by weapons in the hands of an enemy and those whose complaint was the result of the peculiar conditions incident to war. The functions of the department would therefore be: (1) examination, diagnosis and classification; (2) diseases of the ear, including the nose and throat, under conditions incident to war; (3) wounds of the ear, nose, and throat incident to war. Under the first heading came not only the determination of the character of the disease but also an estimation of its degree

as bearing upon the serviceableness of the patient, and whether the disease was acquired before or after and during the entrance into service. The number of cases in which there was already existing disease, or in which this had been acquired by other means than that of wounding, proved to be considerable, amounting to somewhat more than 2000 cases, resulting properly from the fact that the acute demand for service had necessitated the calling out of so many men ordinarily beyond service years. The largest number of cases classified as unfit were those suffering from chronic suppurative disease of the middle ear, including nearly 50 per cent. of those patients examined in the ear, nose, and throat department of the hospital and determined unfit for service. Multiplied by the number of military subdepartments carrying on the same work, there is evidence of an unexpectedly large number of men withdrawn from service to the State by this disease. The chronic suppurative disease of the middle ear is in a very large percentage of the cases not only the result of an acute infection, but is distinctly a *morbus pauperum*, and the importance of the increase of institutions in which this disease can be treated and the people taught the necessity of its prevention is distinctly emphasized. Treatment of these cases under the conditions of military service is usually impossible except insofar as operative measures are concerned, and these not infrequently find, and leave, the patient unfitted for return to duty except in some subordinate capacity at the rear. Even when the chronic middle-ear suppuration has come spontaneously to an end, the resultant chronic adhesions and thickening cause an impairment of the hearing in so high a grade as to interfere with the patient's value for active service. Next to the suppurative middle-ear diseases as a cause of unfitness come the results of acute and chronic infectious diseases, foremost among which has been found to be syphilis, 1 per cent. of all the cases unfit for active or secondary service being due to this disease. Of the total examined, including the cases rejected on account of diseases of the nose and the throat, about 60 per cent. of the cases presented at the hospital for examination were declared as fully fit for service. Among the causes of aural complications other than those resulting from wounds, typhus was the most prominent, it having been the author's observation that suppurative inflammation of the middle ear not only occurred frequently in typhus, but that it was often one of the initial symptoms, an observation confirmed by members of the medical staff having charge of epidemic diseases, but contrary to that found in text-books, which placed the complications of the ear in the fourth or fifth weeks of the disease, while in the majority of the cases of this kind under the author's care, by the time the above-mentioned period had been reached, the suppurative middle-ear trouble had become complicated by mastoiditis, demanding operation in 9 cases as compared to 25 operations in cases due to other causes. Diseases of the inner ear and of the auditory nerve were also found to be more common in typhus than in other infectious diseases. Another observation of interest was that of acute inflammation of the middle ear in cholera, intimately presenting the characteristics of a similar manifestation in tuberculosis. A similar middle-ear complication was also observed, but in a much less percentage, in dysentery. The present war has resulted in the publication of a large number of special articles upon injuries to the ear under titles difficult of classification, such as laby-

rinth vibration, detonation deafness, deafness from hand-grenade concussion, gunshot wound of the skull with cochlear symptoms in contradistinction to which the author gives the results of 200 carefully studied cases, dividing them into two classes, direct and indirect, the direct including those in which the force was applied directly to some portion of the ear, the indirect those in which the effective force was expended outside of the ear and still caused distinctly determinable changes in its condition, this complicated organ consisting of some parts which are directly and others only indirectly attackable, it being understood that this differentiation cannot be maintained in all cases, because under certain conditions there may be no injury to the more exposed portion of the organ of hearing accompanied by a concussion effect producing injury in the deeper seated parts, or the direct attack, in addition to forcible disruption of the exterior portions of the ear, may extend also to the labyrinth and auditory nerve, the protected positions of the more important parts of the organ of hearing being such that the outer ear most frequently, the middle ear but seldom, and the inner ear very rarely, was the subject of direct injury. The majority of injuries to the auricle were those resulting from explosions in the immediate neighborhood and burns resulting from explosions, gases, and flames, as well as those cases in which the injury to the auricle was the result of the exposure to intense cold. These injuries were comparatively slight and the resultant deformity was moderate. There were other cases, however, in which the injury to the auricle was very much more severe, including cuts, burns, tearing away of the upper portion of the auricle, and, in one case, the loss of the greater portion of both auricles. More frequent than the wounding of the auricle were the direct wounds of the external auditory canal and of the mastoid process, gunshot wounds of the mastoid process being repeatedly recurring type, and often found in connection with frontal wounds of the skull, the tympanic cavity being either directly or indirectly injured, and in the majority of the cases the labyrinth subjected only to indirect invasion. In this type of cases the projectile entered either through the external canal or its neighborhood, penetrating the mastoid. In some cases the course of the bullet was in the opposite direction. The result of a simple gunshot fracture of the external canal was usually a membranous and bony narrowing, or even complete closure, of the canal, 10 cases of such absolute bony closure having been observed. The determination as to operation in these cases was based upon the amount of remaining hearing and the presence of a suppurative process behind the bony closure; in the latter cases only was operation determined upon, the preferable operation being that in which the auricle was reflected forward, the radical operation being contraindicated in view of a possible return of the hearing. In 2 of these cases, notwithstanding the fact that the hearing power in both of them was, before operation, determined to be relatively good, neither the drum head nor the ossicles could be found. In 4 other cases in which the wounding of the external canal was accompanied by destructive concussion of the mastoid process the sequestra were removed in the progress of an antrotomy, the destruction of the bony mastoid being so complete as to have left a portion of the drum bare in one instance and to have included the exit portion of the facial canal in another.